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ABSTRACT

This is the final report of the 3-year feasibility phase of a projected 7-year longitudinal evaluation of Project Developmental Continuity (PDC), a Head Start demonstration program aimed at providing educational and developmental continuity between children's Head Start and primary school experiences. Chapter I gives an overview of the PDC program and discusses the components, purposes, problems and limitations of the evaluation. Chapter 2 focuses on the program impact study components of the preliminary evaluation and discusses site selection, measurement instrument selection and refinement, data collection, and sample equivalence and attrition. Chapter III focuses on the program implementation process study components of the evaluation, briefly summarizing planning year activities, planning year monitoring, consolidation of process evaluation tasks, design and testing of implementation assessment methods, establishment of criteria to measure implementation, development of the Implementation Rating Instrument (IRI), planning of data collection methods, the Year II Implementation Report and Year III Implementation Study findings, and cost study aspects of the implementation process study. Chapter IV gives conclusions and implications of the study. A summary of measures used in the evaluation and the contents of the evaluation reports are appended. (RH)

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A PROCESS EVALUATION OF PROJECT DEVELOPMENTAL CONTINUITY: FINAL REPORT OF THE PDC FEASIBILITY STUDY, 1974-1977

April 1978

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Preface

In the summer of 1974 HEW's Office of Child Development (now the Administration for Children, Youth and Families) began a new demonstration program aimed at promoting greater continuity between the preschool and elementary school experiences of Head Start children. This effort, named Project Developmental Continuity (PDC), incorporated a major program evaluation as well. For three years the High/Scope Educational Research Foundation worked with its subcontractor, Development Associates, to provide data that would aid the Administration for Children, Youth and Families (ACYF) in its efforts to design and implement effective early childhood education programs.

This final report of the first phase of the evaluation of PDC summarizes our analysis of the feasibility of conducting a longitudinal study of PDC and provides a preliminary examination of factors affecting program implementation. A variety of audiences may find this work useful:

- National policymakers who must identify the best possible mix of programs for carrying out legislative intent in providing comprehensive educational programs for children and their families.
- National and regional program administrators who must decide where and how to install local projects and then provide adequate control and technical assistance in helping projects use their funds more effectively.
- Local Head Start, school and project staff who daily face the realities of implementing demonstration programs.
- The child development research community which is constantly seeking more effective ways to help children fully develop their potential.

In a summary such as this it is impossible to respond completely to each group's information needs or to present every fact we have learned about PDC. Instead, this report highlights the procedures and major findings obtained over the four-year program evaluation and briefly discusses their implications. More detailed information is presented in a series of interim reports. These reports, listed in Appendix B, are available from the High/Scope Foundation.

PDC PROGRAM AND EVALUATION OVERVIEW

Project Developmental Continuity was launched in the summer of 1974 with two overriding purposes, as described in the program guidelines:

- To assure continuity of experiences for children from preschool through the early primary years by stimulating cognitive, language, social-emotional and physical development and thereby promoting educational gains for children through the development of social competence.

- To develop models for developmental continuity that can be implemented on a wide scale in Head Start and other child development programs and school systems.

The first purpose sets the basic rationale for the program and emphasizes the comprehensive nature of the expected effects. The second purpose clearly establishes PDC as a national demonstration program.

Program Overview

The PDC demonstration program is part of a major effort by the Administration for Children, Youth and Families to explore the value and feasibility of introducing variations on the basic Head Start theme. In 1972 the Head Start "Improvement and Innovation" effort was announced. In the Head Start Newsletter for August/September 1972, Head Start Director, James Robinson, described the "I and I" effort as "the first substantial and really serious effort ever mandated to improve the quality of Head Start programs." The experimental, demonstration programs instituted as part of this effort have included, in addition to Developmental Continuity, the Home Start Demonstration Project, the Child and Family Resource Program, Home Start Training Centers, and the Early and Periodic Screening, Diagnosis and Treatment Program. These programs follow in the tradition of Planned Variation Head Start, Follow Through, Health Start, Parent Child Development Centers and Parent Child Centers.

Although Developmental Continuity shares many features of these other Head Start programs, it represents the first attempt by ACYF to establish a program that mandates coordination with the public schools. This coordination was designed to establish a consistency of approach and a continuity of

experience that will enhance the social competence of children as they go from the Head Start years through third grade. Although preschools and public schools have traditionally not worked together, Project Developmental Continiuty aimed to establish such a relationship. Typically, public schools have not been concerned with comprehensive services and parent involvement in the way Head Start programs have. Through PDC, schools and Head Start centers have the opportunity to work together to improve the continuity between them.

Two PDC program models were instituted to provide alternative ways of establishing the administrative structure for continuity. In the Preschool-School Linkages approach, administratively separate Head Start and elementary programs are brought together by the device of a PDC Council, whose membership includes teachers, parents, administrators from both organizations, and community representatives. In the Early Childhood Schools approach, Head Start and elementary programs are combined both administratively by the Council and physically in the same building, thus creating a new institution. Regardless of the approach, a qualitatively different program is expected to emerge as a result of the Head Start-elementary school cooperation.

Continuity is expected to be established in two contexts: that of the individual child and that of the school structure. In the first context, continuity means, for example, that a child should not have to have his or her personal nature and needs rediscovered each year as he or she moves from one grade to the next; instead the child should become a more and more fully recognized member of the school "family" as time passes. In the context of school structure, continuity implies cooperative pursuit of common goals, and this involves articulation of philosophies and methods in all the various areas of school enterprise. It is expected that structural continuity will contribute directly to continuity in the attention given to individual children.

In the summer of 1973 the Huron Institute of Cambridge, Massachusetts was awarded a contract to develop a concept paper on program options for providing continuity of services. During the winter of 1973-74 the Administration for Children, Youth and Families assembled a panel to review the various options that were outlined in the Huron report. The present conceptualization of Project Developmental Continuity was decided upon, and during late winter and early spring 1974, a draft of guidelines for the initial planning year was drawn up with the assistance of Huron Institute staff. At the same time, Requests for Proposals were being developed by ACYF for providing technical assistance to the programs and for conducting a national evaluation.

Potential PDC sites were first identified because administrators, parents, teachers and community people at those sites all expressed interest in participating in the program. The selection process involved several steps.

First each regional ACYF office[1] and the Indian and Migrant Program Division asked a number of Head Start grantees within their region to complete a questionnaire to determine the feasibility of implementing a PDC program at their site. Based on responses to this survey, the four sites deemed by each region to be most suitable were recommended to the national ACYF office. A review panel then selected two of these four sites to submit proposals. Staff from the national and regional ACYF offices reviewed these proposals and visited each site to meet with grantee staff, Head Start and public school teachers, parents and Head Start and school administrators and review project plans. Since PDC was intended to extend beyond Head Start into the early elementary grades, U.S. Office of Education staff were involved in the selection process, along with state education agency staff. Through this process one site was selected from each region, except Regions III and VIII, which each had two. Two additional sites were selected to represent the Indian and Migrant Program Division of ACYF Four sites were designated Bilingual Bicultural Demonstration Projects.[2]

This selection process resulted in local settings for PDC that are extremely diverse, ranging from the large urban populations served by the Utah, Iowa, and Washington projects, to more suburban settings in Connecticut and Maryland, and finally to smaller, rural communities in Texas, Florida and Arizona. The ethnic and cultural compositions of these communities are also diverse, including, for example, Navajos, Hispanics, Blacks and Appalachians.

Operation of the program began in 1974 at 15 sites and the entire first year of program operation was designated a planning year for local projects. Staff were hired, component area task forces were appointed, and detailed plans for actual implementation were initiated.

During Year II, 1975-76, 14 sites (the New York site had withdrawn), comprising a total of 42 Head Start centers and elementary schools, began to implement their plans. Program Year III (1976-77) was officially designated as the "implementation year" in the original project design, and by Year III programs were expected to be fully implemented and operational. After Year II the New Jersey site withdrew, resulting in the current 13 sites. During the third program year ACYF decided to continue funding the 13 projects beyond the third program year to permit program operations to continue through 1980-81.

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[1]The ACYF regional offices are located in Boston (Region I), New York City (Region II), Philadelphia (Region III), Atlanta (Region IV), Chicago (Region V), Dallas (Region VI), Kansas City (Region VII), Denver (Region VIII), San Francisco (Region IX), and Seattle (Region X).

[2]The original 15 sites were located in Arizona, California, Colorado, Connecticut, Florida, Georgia, Iowa, Maryland, Michigan, New Jersey, New York, Texas, Utah, Washington, and West Virginia.

The Role of the National Office

Washington-based staff in ACYF's Program Development and Innovation Division are responsible for administering the national program. They have maintained contact with sites through telephone calls, site visits, written communications, and national workshops. They also helped the sites by contracting with outside groups to provide training and technical assistance.

During the planning year and the program start-up year, the Huron Institute served as the T&TA contractor. As part of this effort, a staff of field specialists (each one working with one or two PDC programs) made several visits to the PDC sites. The PDC T&TA philosophy implemented by Huron Institute staff was one that stressed facilitating participation among all groups involved in PDC at a site, emphasizing all areas of the guidelines, and exposing sites to as many alternatives as possible before making final programmatic decisions. Huron Institute also worked with national ACYF staff in planning the national workshops.

An initial planning meeting held in September 1974 involved local project staff, regional ACYF staff, T&TA staff, and representatives from state education agencies. At workshops held in January and May of the Planning Year, evaluation contractor staff also participated with these other groups. Two national workshops were held during each of the next two years, and in May 1977 a PDC meeting was held in conjunction with a national conference on "Children, Families, and Continuity." These workshops provided a continuing forum for discussion of implementation issues (each workshop typically had one or two themes such as parent involvement or multicultural education), review of guidelines and funding issues, and communication about evaluation matters. In addition to the content workshops and guidance from national and regional program staff, a beneficial feature of these meetings was the opportunity for staffs from the diverse projects to share information, ideas and experiences.

At the beginning of the third program year, Pacific Consultants of Washington, D.C. was selected as the T&TA contractor. One field specialist was selected to work with each PDC site. In addition to providing assistance to sites and organizing two PDC workshops, Pacific Consultants published three issues of a PDC Information Bulletin, in which conference summaries, articles related to PDC Implementation issues, and bibliographic information on materials relevant to PDC were disseminated to the sites.

Program Guidelines

Over the course of PDC, two sets of program guidelines have been published by ACYF. In spring 1974 Guidelines for a Planning Year was distributed to prospective sites to serve as a guide for preparing initial proposals. This set of guidelines was revised in September 1974, and supplemented by "Program Letters" issued periodically from the national office. During the second year (November 1975) a new set of guidelines, PDC Implementation Year Guidelines, was published, describing basic elements that must be present in each PDC project.

The guidelines have consistently outlined requirements and suggestions in the following seven component areas. As such, they have not only provided a framework for the Implementation Study, but have served to define the dimensions that a comprehensive Impact Study should possess:

- Administration: administrative coordination between and within Head Start and the elementary school(s);
- Education: coordination of curriculum approaches and educational goals;
- Training: preservice and inservice teacher, staff and parent training in program-related areas;
- Developmental support services: comprehensive services (medical, nutritional, and social) to children and families;
- Parent involvement: parent participation in policymaking, home-school activities, and classroom visits or volunteering;
- Services for the handicapped: services for handicapped children and children with learning disabilities;
- Bilingual bicultural and multicultural education: programs for bilingual bicultural or multicultural children.

As the implementation findings discussed in this report will show, there is considerable diversity among the 13 remaining PDC programs in their response to the various guideline requirements.

Purpose of the PDC Evaluation

The major purpose of the PDC evaluation is to aid the Administration for Children, Youth and Families in its efforts to design effective programs for children. As Figure 1 illustrates, the evaluation was planned in two phases: the first to determine the feasibility of conducting a longitudinal study of PDC (1974-1977) and the second to carry out that study as children progress through the third grade (1977-1981).

The first phase had two major components--an Impact Study and an Implementation Study. The Impact Study was charged with seven major tasks during the first three years:

- Identify the most suitable comparison Head Start centers and elementary schools at each site.

Figure 1

Cohorts Participating in PDC Impact Study

		Grade Level				
		Head Start	K	1	2	3
Feasibility Study Phase	1974-75	Planning Year				
	1975-76	Cohort 1 (fall & spring)				
	1976-77	Cohort 2 (fall & spring)				
Projected Longitudinal Study	1977-78		Cohort 2 (spring only)			
	1978-79			Cohort 2 (spring only)		
	1979-80				Cohort 2 (spring only)	
	1980-81					Cohort 2 (spring only)

- Select and/or develop measures for assessing program impact on children, parents, teachers, staff.

- Pilot test the measures to determine their reliability, validity, sensitivity to change, relevance to "social competence," ease of administration, and suitability for use in higher grades.

- Determine, on the basis of demographic data and test scores, whether the PDC and comparison groups are really comparable.

- Analyze attrition data at the PDC and comparison schools to determine (a) the sample size needed at each site and then (b) whether attrition during 1976-77 was consistent with projections.

- Provide a preliminary analysis of program impact through the Head Start year (1976-77).

- Search for possible relationships between implementation and impact.

Although the Impact Study has been limited thus far (as explained below) to the study of program impact on children, it is expected that the projected longitudinal study will conceptualize impact more broadly to include parent participation and attitudes, teacher attitudes and work styles, and the organizational climates of the schools, in addition to impact on children's social competence.

The Implementation Study was designed to describe and analyze the processes that led to the measured consequences of the program. There were five basic purposes of the study:

- Describe the nature of the PDC treatment at each site, including descriptions of program costs.

- Describe and analyze national patterns in the implementation of PDC.

- Assess the extent to which each program implemented the basic PDC guidelines.

- Understand the factors and events that have shaped program implementation.

- Assess similarities and differences in experiences provided for children in the PDC and comparison schools.

Major program activities of the first phase of the PDC evaluation are described in greater detail in Chapters II and III.

Efforts to describe and analyze program processes began during the PDC planning year (1974-75) with the preparation of site case studies. During the following year the design for the full Implementation Study was finalized and pilot data were collected at five sites to evaluate the applicability of the interview forms and the procedures for rating implementation levels. On the basis of the analysis of the pilot data, modifications in procedures were made and a major instrument for assessing implementation, the Implementation Rating Instrument (IRI), was finalized.

In the third year this instrument was applied to the interview data and other documentation from nine sites to provide a comprehensive assessment of implementation activities in PDC. Three additional sites were included in various documentation activities but did not receive the systematic implementation ratings. At the thirteenth site, a Navajo program in Arizona, a case history approach to assessing both implementation and impact was taken.

Throughout the three-year study, evaluation efforts have been about equally divided between process evaluation tasks (case studies, monitoring, implementation assessment and cost analysis) and impact tasks. The pie chart presented on the following page illustrates the division of labor and provides a perspective on the breadth of the study.

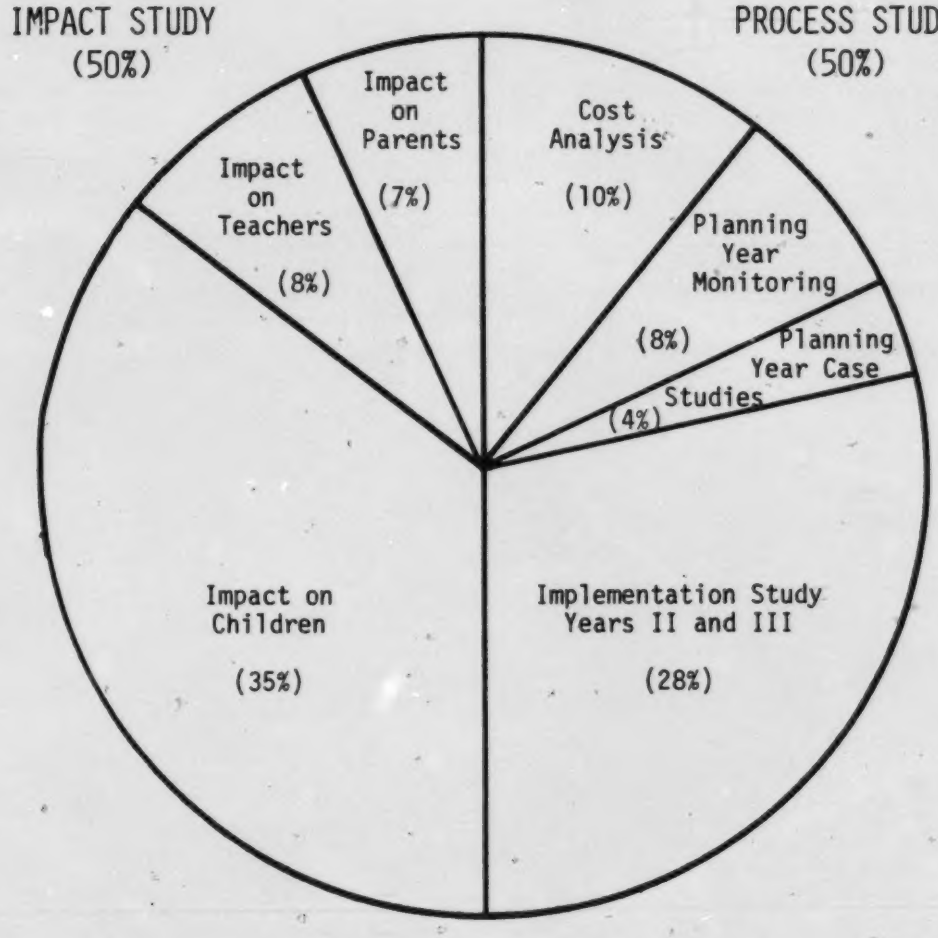
Limitations on the Evaluation

The first phase of the PDC evaluation has been constrained by the inability to employ several key data collection instruments. This circumstance exists because a delay of 14 months in the forms clearance process at the Office of Management and Budget (OMB) made it impossible to conduct some of the planned evaluation activities. The Impact Study, originally conceptualized as a broad assessment of impacts on parents, teachers and the institutions as well as on children, was limited to a study of impact solely on children; the Implementation Study was restricted to a portion of its potential sources of information, was not able to include all sites, and was prevented from examining comparison school programs.

Two key Impact Study instruments had been developed, but were not cleared in time to be used. One was a Teacher Survey developed to assess teachers' attitudes and perceptions of PDC and their own institutions. The second was a Parent Survey designed to obtain information on the extent of parent participation in and attitudes toward the program.

PDC EVALUATION

RELATIVE EMPHASIS GIVEN TO EVALUATION COMPONENTS



The extensive interview forms needed for collecting detailed information for the Implementation Study were also affected. Without OMB clearance, however, it was still possible to conduct interviews with PDC staff most knowledgeable about each component since the interview questions for a particular component were answered by a single individual at a site; it was necessary, however, to limit this data collection to nine sites.[1] In the Implementation Study design we had also planned to interview a sample of parents and teachers at each site to obtain supplementary and corroborating information; nine such interviews were conducted at one site, but could not be carried out at the other sites because of OMB regulations.

Another major gap created by the forms clearance problem involved the interview forms that were designed to collect comparable programmatic data from comparison school principals and Head Start directors. This information would have permitted some assessment of the similarity of treatments in the PDC and comparison settings.

In spite of these difficulties, almost all the evaluation purposes listed on pages 5 and 7 have been addressed. Under the Impact Study the feasibility of a long-term study has been adequately assessed, and the Implementation Study has provided important descriptive and explanatory information about the process of PDC implementation. These accomplishments are reviewed in some detail in the following chapters.

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[1]OMB regulations stipulate that clearance is not required if there are nine or fewer respondents for a particular form; if the total number of respondents (considering all sites and all timepoints) is ten or more, official OMB clearance must be obtained. Since the interview related to a particular program component required only one respondent per site, it was possible to conduct a complete set of interviews at nine sites.

II

REVIEW OF IMPACT STUDY ACTIVITIES

The first year of the Impact Study was a year of preparation during which there were two major concerns: locating suitable Head Start centers and elementary schools in each site to serve as "comparisons" for the PDC Head Start center and school or schools, and selecting measures that would be appropriate for assessing the impact of Project Developmental Continuity. Following these efforts, Years II and III were devoted to assessing the adequacy of the measures, confirming the suitability of the samples and, in Year III, assessing program impact through the Head Start year. Each of these is discussed in turn in this chapter.

Selection of Comparison Centers and Schools

By early summer 1975 the evaluation had collected sufficient information from each of the PDC sites to provide initial estimates of sample sizes needed for Cohort 2 in fall 1976 and to assess the comparability of PDC and comparison Head Start centers and elementary schools. Beginning in December 1974, sites were asked to identify the schools and centers that would be likely locations for the comparison group. At a national PDC workshop in January 1975, forms were distributed to all sites requesting information on the ethnicity, native language, sex, family size, mother's education, preschool attendance, and free lunch eligibility of children in the PDC centers and schools and in the candidate comparison sites.

For each center and school, percentages were computed for the various sample characteristics, and initial judgments of comparability were made on the basis of these center- or school-level statistics. In a report submitted to ACYF in June 1975, recommendations were made for each site regarding the feasibility of continuing the Impact Study. Several special conditions were noted in that report:

- The Arizona project obtained special permission for testing Navajo children.
- Several sites reported difficulties in providing distinct PDC and comparison programs at the Head Start level.

- At the Georgia site special efforts were made to enlist the cooperation of a school board in a neighboring county since PDC comprised the only school in its district. When this effort failed, a special design was recommended using cross-sectional data from children in the PDC school in 1975-76 against which to compare Cohort 2 children as they progressed through the grades.

- The prospect of cross-district busing at several sites emerged as a potential threat to maintaining samples for the evaluation.

Not until Years II and III could group comparability be assessed on the basis of data collected on children. Although the groups turned out to be highly comparable (see p. 21), in June 1975 it appeared that the overall prospects for continuing the evaluation looked very good at only four of the sites, that three sites had problems both with comparability of the comparison centers or schools and with potential attrition, two sites had problems only with group comparability, and the data from four sites led us to be seriously concerned with attrition; the New York site had by then announced its withdrawal from the program and the Georgia program represented a special case with no comparison program. Although conditions at many of the sites could not be described as ideal for instituting a longitudinal study, a number of recommendations were made to improve the prospects. Our report to ACYF essentially recommended collecting additional information during Year II, based on actual child-level demographic and test-score data, in order to make a more rigorous analysis of group comparability. With respect to attrition concerns, in the second year of the study we used more refined methods of estimating the percentages of children who would remain in the sample at each site through third grade.

Selection of Measures

In January 1975 evaluation staff began to review literature in preparation for recommending measures for assessing program impact on children, parents and teachers and for assessing institutional change. This effort culminated in the selection of 12 tests or subtests, a child interview, a teacher rating scale, a tester rating scale, and a classroom observation system to be used across all sites and six additional measures that could be elected by sites who wished to have other areas represented in their evaluation.[1] In addition, the development of teacher and parent surveys was recommended.

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[1]The original intention of the test battery was to be responsive both to the generalized goals of PDC (through a "basic battery") and to specific goals of individual sites (through site-specific measures that could be selected by particular sites). Although the PDC sites were sympathetic with this intention, only four elected any of the site-specific measures; when the psychometric qualities of these measures later proved to be unacceptable, and ACYF decided to discontinue the option of site-specific measures, we heard no complaints from the sites.

Selection Process

Before beginning the selection process, a number of criteria were established by which all candidate measures could be judged. First, six general guidelines were articulated (some of which had been specified in the evaluation RFP): (1) no new measures would be developed; (2) adaptations or modifications of existing measures would be undertaken to make them more appropriate to this study; (3) instruments for the "basic battery" would be evaluated in terms of site objectives; (4) testing time per child would be limited to a reasonable amount (two hours, divided into two or three sessions, was allowed for the pilot testing with the understanding that the battery would be streamlined for subsequent data collection periods); (5) the battery would be as simple and parsimonious as possible in order to increase accuracy of data collection under the complicated field conditions; and (6) single items within instruments would be individually interpretable, assuming that straightforward interpretability at the item level would avoid some of the problems of inferring theoretical processes.[1]

After applying these general guidelines, five specific criteria were used to assess the suitability of each measure reviewed. In order of importance, the measures were required to (1) appear to measure national or local objectives; (2) be appropriate to the children's ages, ability levels, ethnicity and bilingual bicultural status; (3) be practical to administer; (4) have been used in other major evaluations; and (5) demonstrate good psychometric characteristics.

The potential instruments that passed an initial screening along the lines of these guidelines and criteria were rated on 14 factors and tabled in Interim Report II. These 14 factors, incorporating elements of the above criteria plus additional concerns, were grouped into four sets:

- Practical considerations (available for use by fall 1975; appropriate for trained paraprofessionals; test format appropriate for PDC age groups; scoring procedures appropriate for data processing; reasonable testing time for young children).

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[1]As the analysis of measures occurred at successive stages of the evaluation, this last guideline assumed less and less importance. At best its application depends upon the nature of the particular instrument; though a particular observation category may have meaning as an item of behavior, or an item assessing factual information might be important for its own sake, most of the measures employed in the evaluation are meaningful only if a group of items (factor or scale) behaves consistently and can reasonably be said to relate to a psychological dimension of interest to the program planners.

- Psychometric qualities (adequate construct and/or predictive validity; adequate test stability and internal consistency; absence of cultural and/or SES bias; representativeness of standardization sample).

- Relevance to PDC (spans age range of PDC population, 4-8; Spanish adaptation available; relevant to PDC goals; likely to demonstrate program effects).

- Past use (used in previous national evaluations or large-scale studies).

One of the major goals in 1975 was to establish measures of children's "social competence." This goal was in large measure attributable to the influence of Edward Zigler, who as Director of the Office of Child Development in 1972 described Head Start as hoping:

> *...to bring about greater social competence in disadvantaged children. By social competence is meant an individual's everyday effectiveness in dealing with his environment...his ability to master appropriate formal concepts, to perform well in school, to stay out of trouble with the law, and to relate well to adults and other children (quoted by Anderson and Messick, 1974, p. 283).*

The initial conceptualization of the task of assessing children's social competence drew heavily upon the discussion of 29 competencies by Anderson and Messick (1974) and the reviews of the Rand Corporation for its design of a national evaluation of Head Start (Raizen & Bobrow, 1974); the identification of social-emotional behaviors was especially influenced by the work of White and Watts (1973) and Ogilvie and Shapiro (1973).

The final conceptualization of social competence was perhaps closest to the framework outlined by Anderson and Messick, primarily because their competencies appeared to be more inclusive and thus closer to PDC's concern with developing each child's "everyday effectiveness in dealing with his environment and responsibilities in school and life"; the Rand approach, on the other hand, placed greater emphasis on the child's effectiveness in the "role of pupil." Areas of expected impact on teachers and parents were also developed in consultation with members of the evaluation's advisory panel and staff at ACYF.

In an attempt to take program goals more specifically into consideration as the measures were being selected, a "PDC Program Goals Questionnaire" was developed in the spring of 1975. This questionnaire contained statements describing 25 child social competencies, 18 teacher or staff goals, and 10 goals for parents. The occasion of a national workshop held in May 1975 was used to explain what information we wanted and how each PDC project could complete the questionnaire in such a way that it would represent the opinions of the local program. Four goals for children were rated as "most important" by five or more sites:

- general language use
- problem-solving skills
- self-directing; being able to influence the outcome of events
- health and nutrition.

A few sites (i.e., less than five but more than one) listed the following as "most important": learning how to learn, realistic self-appraisal, recognition of feelings in self and others, sensitivity to and understanding of others, social problem-solving, positive school attitude, gross motor skills, and perceptual motor skills. The predominance of so many goals that are inadequately assessed by available tests was an important factor in leading us to develop observational and rating procedures for tapping child characteristics in the social-emotional domain.

The "most important" goal for staff listed by five or more sites was that teachers become better able to individualize instruction. The "most important" goal for parents was that they have more input into decisions about the total school program for all children.

Final Selection of the Pilot Year Battery

The literature review was conducted attempting to take into consideration the definitions of social competence, the various criteria listed above, and program goals. Sources included other evaluation studies of Head Start and related programs, published instrument reviews, journal publications and consultant opinions. The measures reviewed were discussed and evaluated in Interim Report II, along with our recommendations for the battery. The instrument review was organized according to broad program goal areas: children's social-emotional development; psychomotor development; health and nutrition; cognitive and language development; impact on teachers and parents; and bilingual bicultural impact goals. For each of these areas the report described the relevant theoretical constructs, the potential measures, and reasons for selecting or rejecting particular measures.

These recommendations were reviewed by the PDC Evaluation Advisory Panel, outside consultants, and ACYF evaluation and program staff. Modifications were made in the recommended battery, and almost immediately the task of preparing for data collection began. All measures except the Bilingual Syntax Measure had to be translated into Spanish, four measures were translated into Navajo,[1] the classroom observation procedure was finalized,

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[1]Tape-recorded oral translations were made of four measures in the psychomotor domain by native Navajo speakers. Analysis of the fall pretest data showed all to have questionable reliability. It was therefore recommended that testing be discontinued at the Arizona site and that a case history approach to assessing both implementation and impact be instituted.

copyright clearances for the published tests were secured, test booklets and administration manuals were prepared, testers were recruited and hired from the PDC communities, and on September 4, 1975 eight trainers and 44 testers convened in Michigan for eight days of intensive training.

The measures that were administered in that first fall testing are indicated in the first column of Table 1. (Because of the large number of measures that were potentially worthy of inclusion in the PDC battery and the limits on the amount of testing four-year-old children can tolerate, not all measures were administered to all children.) Parent and teacher questionnaires were developed but not administered at that time; they were submitted to the Office of Management and Budget for forms clearance with the expectation of being able to administer them by spring 1976.

Data Collection Procedures

Careful procedures were developed to enhance the quality of the data.[1] The procedures included (a) an organizational structure that prescribed roles and responsibilities for High/Scope staff, local site coordinators and the testers; (b) a training model that provided supportive instruction under a variety of conditions and careful analysis of individual tester performance; (c) onsite monitoring of testers under field conditions before the beginning of actual data collection; (d) weekly monitoring among local testing staff throughout the data collection; and (e) careful check-in procedures by High/Scope data processing staff and communication of problems to the site coordinators.

Over the four testing periods from fall 1975 to spring 1977 there was excellent retention of local testers. Of the 34 testers employed in spring 1977, 50 percent had worked with the evaluation since fall 1975. This considerably eased the task of training for each successive data collection.

Similar procedures were followed during each data collection period, though each period also had its special features. In spring 1976, for example, the child measures were administered to children in the upper grades at two sites to obtain estimates of their suitability for use beyond the Head Start year; in spring 1976 and spring 1977 a bilingual measure of oral productive language was tried out on small samples. All of these activities had as a basic purpose the development, refinement and validation of a set of instruments that would provide a meaningful assessment of children's social competence as it might be affected by PDC.

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[1]Although PDC had its unique characteristics that affected these procedures, we were fortunate to be able to draw heavily upon the procedures developed by High/Scope and Abt Associates during the course of the National Home Start Evaluation.

Table 1

Child Measures During the First Phase of the PDC Evaluation

Measure	Type of Measure	Assessment of Suitability[1,2] Fall 1975 (III)	Spring 1976 (IV)	Fall 1976 (VI)	Spring 1977 (VII)
Cognitive-Language					
Bilingual Syntax Measure	Test	C	P	C	C
Block Design (WPPSI)	Test	C	C	C	D[3]
Block Design (WISC)	Test	D[3]	-	-	-
Conceptual Grouping (MSCA)	Test	P	D	-	-
Draw-A-Child (MSCA)	Test	C	R	C	C
Say and Tell (CIRCUS)	Test	P	D	-	-
Verbal Memory-1 (MSCA)	Test	C	R	C	C
Verbal Memory-3 (MSCA)	Test	C	C	C	C
Verbal Fluency (MSCA)	Test	C	C	C	C
Social-Emotional					
Child Rating Scale	Rating	C	C	C	C
PDC Classroom Observation System	Obs.	R	R[4]	C	C
Preschool Interpersonal Problem-Solving Test (PIPS)	Test	P	C	C	C
Pupil Observation Checklist (POCL)	Rating	C	C	C	C
Stephens-Delys Reinforcement Contingency Interview	Test	D	-	-	-
Psychomotor					
Arm Coordination (MSCA)	Test	P	C	C	C
Block Building (MSCA)	Test	D	-	-	-
Leg Coordination (MSCA)	Test	P	D	-	-
Site-Specific Measures					
Do You Know? (CIRCUS)	Test	P	D	-	-
Opposite Analogies (MSCA)	Test	P	D	-	-
Wepman Auditory Discrimination Test	Test	D	-	-	-
Other Measures					
Adult Language Check	Obs.	C	C	C	C
Height and Weight	---[5]	C	C	C	C
PDC Faces Interview	Test	-	D	-	-
Preschool Productive Language Assessment Task	Obs./ Test	-	R	-	R

[1]Letter indicates measure was administered at that timepoint and that one of the following conclusions was made:

C = Continue to use the measure with little or no modification
P = Provisionally retain measure, attempting to correct minor problems with reliability, validity or administration procedures
R = Refine the measures through further development work
D = Discontinue the measure
- = Measure not administered

[2]Roman numeral indicates number of interim report in which analyses are reported.

[3]Administration of WPPSI and WISC Block Design subtests was discontinued once their suitability as covariates was established; they were not intended to be repeatedly administered.

[4]In addition to other refinements, after spring 1976 it was recommended that the observation system be used for assessing classrooms rather than individual children.

[5]Direct measure.

Note. Each of the measures is briefly described in Appendix A.

Assessing the Adequacy of the Measures

Over a two-year period, the initial battery of 17 tests, two observation instruments and two rating scales has been winnowed to seven tests, two observation instruments and two rating scales (see Table 1). In the process, much has been learned about the interrelationships of these measures and the structure of the battery as a whole, and the prospects for a useful evaluation of child outcomes, at least in the short run, seem good at this time. Further, the Spanish-language versions of the instruments appear to be about equally suitable for their intended sample.

At each of the four timepoints when tests, observations, and ratings were completed, extensive data analysis was undertaken in order to assess the acceptability of the measures for the purposes of the evaluation. Although the analyses differed in detail from time to time (for example, it was not until spring 1976 that test-retest stability analyses could be conducted), taken as a whole, they were designed to provide information on the following characteristics: reliability, validity, sensitivity to change, relevance to social competence, suitability for use in the higher grades, and ease of administration. Decisions made about the measures at each timepoint are summarized in Table 1.

Reliability

In spring 1977 the internal consistency reliability coefficient was .65 or greater for all measures in both the English- and Spanish-dominant samples. Most measures remained constant in their reliability indices across the four timepoints at which they were administered during this evaluation. Changes in scoring increased the reliability of two measures, but the reliability of another measure has declined slightly over time.

Validity

The validation procedures involved determining the expected relationship of each measure with each of the others, then comparing these expectations with the relationships that actually appeared in the data. Under this convergent-discriminant method of assessing validity, the assumption is made that if an instrument is actually measuring the construct it is intended to measure, the instrument will correlate highly with other measures of the same general construct, will correlate moderately with measures of similar constructs, and will not correlate at all with measures of independent constructs. All the instruments examined are acceptably valid for Head Start children, as evidenced by the stability of their validity indices across two cohorts and three timepoints.

Sensitivity to Change

Since the Impact Study depends upon the PDC battery of measures to detect changes that can be attributed to program differences, three types of analyses based on the pilot samples' fall 1975 and spring 1976 data were carried out:

- The correlation of each measure in the fall and in the spring with child age at the time of testing was calculated to determine the age-relatedness of the measures; the correlations tended to be low, positive, and significant, with coefficients generally between .15 and .30.

- The difference between children's fall scores and spring scores on each measure was analyzed to ascertain if the scores increased significantly from fall to spring; all measures showed a significant fall-to-spring increase.

- A regression procedure was used to determine whether the observed spring mean on a measure was equal to or greater than the score that would be expected knowing how much older the children were in the spring. For all measures except the BSM-English, the mean actual score was significantly higher than the mean expected score, indicating that the tests are sensitive to change beyond that which is simply a function of increased age. (The most likely factor to explain this additional gain is the children's Head Start experience.)

Relevance to Social Competence

Since the PDC battery was constituted with the intent of measuring the traits that comprise social competence, analyses were performed for Interim Reports IV and VII that examined the relationship of test scores to ad hoc criteria of social competence. The criteria were established by factor analyzing ratings completed by each child's teacher and tester, and then creating factor scores for each child that represented his or her status on each of the "social competence" factors. The assessments provided by the teachers and testers are based upon observations of each child's behavior in a variety of formal and informal situations, and thus logically come close to representing measures of the child's "everyday effectiveness," i.e., social competence.

The object of the analysis (a linear regression procedure) was to determine the magnitude of the relationship existing between the tests included in the PDC battery and the "social competence" criteria. The more relevant the tests are to social competence, the stronger the relationship expected. In spring 1977 all tests were found to be substantially associated with the collective "social competence" criteria. Thus, these tests, originally selected for their theoretical relevance to social competence, seem to provide measures that are empirically relevant to social competence as well.

Suitability for Use in the Higher Grades

During the 1975-76 testing periods, approximately 25 children per grade (kindergarten through grade 3) were tested at the Georgia site as part of the cross-sectional design there. In addition, 30 third graders were tested in Maryland.

Conclusions about the suitability of the child measures for use at each of these grades were based on four factors: response distributions on the items of each measure, mean scores on each measure, reliability (internal consistency), and validity. Based on these factors, all of the measures appear to be useful through grade 3, either in their present forms or with modifications.

Ease of Administration

One of the factors taken into consideration when tests were being reviewed for the PDC Impact Study was their general suitability for administration by paraprofessionals. In general, monitoring of testers during training and data collection indicates that the tests have not been difficult to administer. Tester performance improves with practice and administration difficulties are more apparent with new testers than with experienced ones.

Assessing the Suitability of the Samples

The two chief dimensions of sample suitability examined in this study are the comparability of the PDC and comparison groups and sample size. Since the ultimate test of PDC's effects on children is made by comparing their performance at some future point with a group of children who have not participated in PDC, it is essential that the initial equivalence of the two groups along important dimensions be established. Further, these tests of PDC's effects will require that a sufficiently large sample remain by the end of third grade if a complete test of the longitudinal impact of PDC is to be made. Since there are really two samples within the PDC study (children whose dominant language is English and children at the bilingual bicultural demonstration sites whose dominant language is Spanish), the suitability of each sample was assessed separately.

Similarity of PDC and Comparison Groups

As mentioned above, the comparison sites were initially selected to resemble the PDC Head Start centers and elementary schools along some important dimensions. Once data collection was underway, however, it became possible to compare group means on a large number of variables for which child-level data were available. This was done for Cohort 1 during 1975-76

in order to gain a sense of how likely it was that group comparability would be achieved for Cohort 2. The results of these analyses were highly encouraging, but where problems existed efforts were undertaken to improve group comparability. In spring 1976 sites were informed of the nature of the PDC-comparison group differences and they attempted to modify recruitment practices so as to provide a better match. The important comparability analyses were conducted on fall 1976 data from Cohort 2. For each test and rating scale and for six background characteristics (ethnicity, sex, age, prior preschool experience, number of siblings and mother's education) the assumption of PDC-comparison group comparability was tested statistically using the chi-square technique for categorical variables and t tests for metric variables. From these analyses we reached the following conclusions in Interim Report VI:

- At the individual site level the groups appeared similar; there were differences on background variables in only one site and very few differences on any of the performance measures.

- At the aggregate level the groups appeared extremely similar; for the English-dominant sample, there were no significant group differences on background variables and only one difference in test performance; for the Spanish-dominant sample, the groups differed on only one background variable, and there were no differences on any of the performance measures.

For a longitudinal study in which extensive attrition is expected, it is also necessary to show that attrition does not bias the relative composition of the PDC and comparison groups. Potential biasing due to attrition was assessed in two ways: (1) the PDC and comparison children remaining in the sample in spring 1977 were compared on their fall 1976 test performance and background characteristics (to determine whether the two groups are still comparable); and (2) the children remaining in each group in spring 1977 were compared with those who had left (to determine whether the remaining children are representative of the original sample). Very few differences were found in either of these analyses for either the English- or Spanish-dominant samples. These analyses led us to conclude (in Interim Report VII) that the groups are still comparable and that each group still reflects the characteristics of the original sample. The fact that both these dimensions remain stable after 12% of the sample departed is noteworthy and encourages optimism that the processes accounting for attrition may be operating in ways that will not seriously bias the groups in the future.

Sample Size

In Interim Report VI evidence was presented to show that the sample sizes were likely to remain adequate for conducting analyses with all sites compared. Attrition has been a major concern since, with smaller samples, it becomes increasingly difficult for the statistical analyses to separate PDC's effects from the effects of the many other factors that contribute to children's performance. Several procedures were used for estimating the attrition that will be likely at each of the PDC sites. Initial projections made in spring 1976 were used to determine the Cohort 2 sample size sites were expected to achieve.[1] In Interim Report VI we projected that, overall, about 40% of the PDC group and 36% of the comparison group would remain at third grade. Considering that further reductions in sample size will occur when certain handicapped children cannot be tested or when children refuse to cooperate on particular measures, it was estimated that about 205 PDC and 170 comparison children would be left in the English-dominant sample four years from now.

At the request of ACYF we asked each PDC site to locate children from the original fall 1976 sample who are currently enrolled in PDC and comparison school kindergarten classes.[2] There are currently 410 PDC and 322 comparison children enrolled in the appropriate schools (65% retention in PDC and 57% in the comparison group).[3] These figures are extremely close to the numbers and percentages projected in Interim Report VI. These figures are encouraging in the aggregate, although there are some sites at which the samples will soon diminish to a size that would make testing uneconomical. There are five sites with fewer than 30 children in the PDC kindergarten group and one has only 19 children remaining;[4] one site has only 14 children remaining in the comparison group.

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[1]At that time the Florida site seemed plagued with both small initial sample sizes due to the size of the Head Start program and very high attrition rates. In spring 1976 (Interim Report III) we recommended that consideration be given to dropping the site from the child impact aspect of the evaluation. The site presented additional information, however, suggesting that attrition was not so great among the current Head Start population, so a special effort was made early in fall 1976 to collect additional data through personal interviews on site. On the basis of this information, it was decided to include Florida in the evaluation; as of fall 1977, Florida now appears to have the lowest rate of attrition of all the PDC sites.

[2]As of November 1977.

[3]The 410 PDC children are located in 19 elementary schools across the 12 sites, and the 322 comparison children are spread across 37 schools.

[4]A newly enacted state law in Georgia changed the date by which kindergarten children must be five years old from December 1 to September 1, forcing 16 of last year's Head Start children to remain in Head Start another year.

Assessing Program Impact Through the Head Start Year

Once the evaluation had provided evidence that the child measures were adequate, that the PDC and comparison groups were highly comparable, and that large enough samples would remain (at least in the aggregate) for a longitudinal study, the stage was set for examining impact through the Head Start year (1976-77). Differences between the scores of PDC and comparison group children on each measure were subjected to analysis of covariance (performed separately for the English- and the Spanish-dominant samples). Pre-test was used as a covariate and sex, ethnicity, prior preschool experience, and site were introduced as blocking factors to further reduce error variance.[1]

Table 2 shows the adjusted spring scores of the PDC and comparison groups on each of the test and rating scale variables. Across the 30 analyses performed for the English- and Spanish-dominant samples, four were statistically significant (all favoring the comparison group). Although one might take the statistically significant differences to imply that the comparison group children gained more during the Head Start year than the PDC children, these differences are too small to be of any practical importance.[2] Thus we conclude that the two groups remain essentially identical at the end of the Head Start year.

Most planners and participants in the PDC demonstration effort expect the effects of Head Start-elementary school continuity to appear only after the children progress into the elementary grades. Thus these findings confirm the general expectation that the two groups would be comparable through the Head Start year. The fact that the two groups began as virtually equivalent groups in fall 1976 and that they received highly similar Head Start experiences during 1976-77 means that the groups began kindergarten (in fall 1977) still evenly matched. This sets the stage for a clear test of the developmental continuity hypothesis during the next phase of the evaluation.

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[1] Details of these analyses are described in Interim Report VII, Volume 3.

[2] In only one case does the magnitude of the difference between group means exceed .25 standard deviations (see Table 2); in all cases the percent of variance accounted for by group membership is negligible (for the three differences in the English-dominant sample the variance accounted for by group membership did not exceed 2% and for the single difference in the Spanish-dominant sample group membership accounted for 8% of the variance).

Table 2

Relative Status of PDC and Comparison Groups on Dependent Measures
(Values Adjusted for Extraneous Factors), Spring 1977

Measure	Adjusted Group Means				PDC-Comparison Difference	Standard Deviation of the Measure	Group Difference as % of SD (shown for significant differences only)
	PDC	*N*	Comp.	*N*			
ENGLISH-DOMINANT SAMPLE							
BSM-English	10.23	*470*	10.43	*412*	-.20	3.89	
WPPSI	8.58	*173*	8.77	*178*	-.19	4.37	
Verbal Fluency	9.12	*464*	9.33	*406*	-.21	5.69	
Verbal Memory-1	14.79	*470*	15.26	*412*	-.47	6.43	
Verbal Memory-3	3.69	*464*	4.18	*405*	-.49**	2.77	.18
Arm Coordination	4.54	*464*	4.43	*404*	+.11	3.41	
Draw-A-Child	5.48	*465*	5.97	*406*	-.49***	2.61	.19
PIPS	2.62	*465*	2.83	*406*	-.21	1.76	
POCL-1: *Task Orientation*	34.47	*436*	34.09	*392*	+.38	9.66	
POCL-2: *Sociability*	13.54	*436*	13.10	*392*	+.44	3.79	
CRS-1: *Friendliness*	18.79	*431*	18.49	*364*	+.30	3.62	
CRS-2: *Aggressiveness*	23.21	*437*	23.34	*357*	-.13	5.36	
CRS-3: *Perseverance*	29.28	*442*	29.23	*351*	+.05	5.99	
CRS-4: *Independence*	5.81	*441*	5.64	*368*	+.17	1.61	
CRS-5: *Self-Assurance*	30.63	*435*	30.89	*353*	-.26	6.04	
CRS-6: *Resourcefulness*	12.33	*437*	12.62	*354*	-.29	2.54	
Weight	40.49	*466*	40.86	*401*	-.37*	6.05	.06
Height	42.62	*464*	42.62	*398*	0	2.20	
SPANISH-DOMINANT SAMPLE							
BSM-English	7.82	*7*	4.05	*6*	+3.77	5.22	
BSM-Spanish	12.56	*32*	12.44	*43*	+.12	2.77	
Verbal Fluency	8.41	*37*	7.78	*44*	+.63	4.81	
Verbal Memory-1	17.34	*37*	16.90	*44*	+.44	6.19	
Verbal Memory-3	5.02	*36*	4.53	*44*	+.49	2.65	
Arm Coordination	6.88	*36*	5.87	*43*	+1.01	3.86	
Draw-A-Child	6.42	*37*	6.40	*44*	+.02	1.97	
PIPS	2.68	*37*	3.69	*44*	-1.01*	1.90	.53
POCL-1: *Task Orientation*	39.37	*35*	35.56	*42*	+3.81	9.83	
POCL-2: *Sociability*	13.61	*35*	13.13	*42*	+.48	4.07	
Weight	41.02	*33*	40.24	*39*	+.78	5.17	
Height	41.95	*33*	42.10	*39*	-.15	2.11	

*p < .05; **p < .01; ***p < .001.

Examining PDC's Impact Under Specific Conditions

Despite the generally equivalent overall progress of the PDC and comparison groups, it is conceivable that PDC might have had a differential effect under certain conditions. For example, one might expect greater program effects at some sites than at others. Analyses were carried out to examine the possibility that PDC's effect might have been different depending upon the site or upon certain characteristics of the child (sex, ethnicity, and prior preschool experience). No statistically significant effects were found; in other words, there is no evidence to indicate that PDC's effects are more prominent under some conditions than under others. Thus, through the Head Start year at least, PDC is equally effective for boys and girls, for all ethnic groups, for children from all sites, and for all children regardless of prior preschool experience.

III

REVIEW OF IMPLEMENTATION STUDY ACTIVITIES

The process evaluation of PDC was originally designed as four separate substudies: monitoring, case studies, implementation study, and cost analysis. During Year I (the planning year), evaluation activities clearly fell into these different areas, but it became apparent that the purposes of the evaluation would be better served by consolidating efforts where it was conceptually appropriate. Thus, in Years II and III all process evaluation activities were subsumed under the name of the Implementation Study.[1] This chapter describes the first-year study of the PDC planning process as reported in the Planning Year Case Studies, describes the development of the complete Implementation Study in Years II and III, summarizes findings from the Implementation Study, and presents findings from the collection of PDC financial data in the Cost Study.

Planning Year Case Studies

The case studies for the planning year documented efforts by each of the original 15 PDC sites to set up the organizational structure and communication network necessary for such an innovative program. While dealing with the same basic issues, each case study is unique, reflecting the diverse populations, educational settings, geographic locations, staffing patterns, and major program goals of each project. The planning year case studies are important documents. Nowhere else in this three-year evaluation effort do we present in such detail the inner workings of each site, as well as the interactions and attitudes of program personnel. The case studies preserve the history of PDC and its 15 original projects and describe the foundation upon which each program has been shaped, furnishing clues for understanding both the successes and failures sites have experienced.

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[1]The Cost Study, though conceptually part of the process evaluation, has been conducted and, for the most part reported, independently.

Data Collection Strategy

Data for the 1974-75 reports were collected in two week-long visits to each project, one in the winter and the other in late spring of the planning year. Information was obtained by data collection teams, primarily through interviews with PDC staff, Head Start and elementary school administrators and teachers, parents and other program participants. Information was verified through committee minutes, questionnaires, classroom observations and PDC proposals.

Each site received a copy of their draft case study report to review, and site comments or revisions were incorporated into the year-end case studies. Drafts of the year-end reports were also sent to the sites for review, so that the final planning year case study for each site contains information from the draft report, an updated summary of planning activities through the end of the school year, and additional perspectives from local, regional, and national reviewers.

Summary of Planning Year Findings

The conclusions reached in this phase of the PDC evaluation are based in part on information collected for the planning year case studies, but interpreted in light of subsequent data. Even by the end of the planning year, however, there were important, though tentative, conclusions represented in the case studies that helped shape the direction the Implementation Study was to take. Some of these preliminary conclusions are reviewed here because they influenced the development of evaluation strategies for the Implementation Study.

PDC programs generally focused their planning year efforts on establishing organizational structures for the local program. Staff needed to be hired; the PDC Council had to be established; committees or task forces had to become functional; community agencies had to be contacted; and, most importantly, the communication links between Head Start centers and elementary school(s) had to be set up and maintained. At some sites these tasks were accomplished within the first few months; at other sites, it took the better part of the planning year to establish the organizational structure for the program.

A number of factors seemed to influence sites' progress in accomplishing the tasks outlined in the planning year guidelines. Institutional support was important, from both the Head Start program and the school system. Program model made a difference; the Early Childhood School (ECS) sites had a somewhat easier time establishing administrative linkages than the Preschool-School Linkage (PSL) sites. The experience and knowledge of

key PDC staff, especially in early childhood education and administration, was important to smooth progress on planning year tasks. Staffing was also important; since there were a large number of requirements for the planning year in all of the program components, sites with two or more full-time component coordinators were generally able to make more progress. By the same token, an active PDC Council contributed to the work of the program, by stimulating other groups as well as substantively contributing to planning.

Planning Year Monitoring

The basic purpose of this task was to assess (1) the extent to which site activities and site objectives matched the model described in the PDC planning year guidelines, and (2) the extent of compliance with Head Start performance standards. Another objective of the monitoring task was to determine problem areas which required attention and, perhaps, technical assistance, and to inform ACYF so that corrective action could be taken.

As a separate and distinct task, monitoring was discontinued at the end of Year I for two reasons. First, monitoring was already carried out by ACYF's regional offices. Second, the monitoring reports' function of describing program status at a given point in time could be accomplished by including descriptive site reports as part of the Implementation Study during Years II and III.

Monitoring data were collected in winter and spring of 1975 during case study visits through the interviews with project staff, administrators, teachers, and parents, and through the review of project documents mentioned above. An interim monitoring report on each site was submitted to ACYF in April 1975, and in June 1975 revised monitoring reports were submitted to ACYF on 14 PDC sites for the entire planning year.[1]

While onsite, evaluation staff reviewed the information collected to ensure that each required planning task was included. As a group the site team then reviewed the planning tasks and assigned codes indicating the degree of compliance of each task. The team members prepared a concise explanation for assigning the compliance code and made appropriate recommendations. The reports were submitted to ACYF for review and possible action.

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[1]See list of reports in Appendix B.

The Monitoring Study produced no "findings" as such, although the systematic way in which it summarized sites' progress on each planning task was useful to the case study writers. The essential findings were the site-level lists of tasks completed and not completed. Although the national program office may not have needed this information for making technical assistance plans,[1] several staff from the PDC projects commented that the process of reviewing planning tasks in such detail had been extremely useful to them.

Consolidation of Process Evaluation Tasks

Based on experience in Year I, it was decided that the purposes of the process evaluation could best be met by combining the implementation, monitoring and case studies. Three considerations prompted this decision:

- The Year I monitoring and implementation studies were redundant in many ways; both included observation of programs and assessment of compliance with ACYF requirements. The principal difference between the two was not in their data collection or analytic tasks, but in the uses to which findings were to be put. The Monitoring Study was to be an instrument for program development; the Implementation Study was a component in the overall study of the PDC program. Thus, by combining the two studies the data collection burden on the sites could be reduced with no loss of information.

- Portions of the Monitoring Study were redundant with existing Head Start and PDC monitoring activities. A major task for the Monitoring Study, the monitoring of program compliance with Head Start performance standards, was already being performed by ACYF's regional offices. Duplication of this effort in the PDC evaluation was unnecessary.

- The case studies, while distinct conceptually from the implementation and monitoring studies, were dependent upon implementation data to be intelligible; the reasons for educational change could not be described adequately

[1] In fact, the frequent visits to PDC sites by staff from the technical assistance contractor as well as at least one visit per site by a national program officer provided ACYF with direct information on planning activities and seemed to lessen their need for monitoring reports.

until the change itself had been described. Similarly, data on the processes of change are most efficiently collected together with data on the nature of the changes. Thus, by combining case studies with the other two studies, considerable duplication of effort could be avoided. The preparation of individual reports on each site was continued as part of the Implementation Study, though the reports were turned into straightforward descriptive accounts with little analysis or interpretation.

Design and Pilot Test of Implementation Assessment Methods

Year II (1975-1976) was devoted to designing and pilot testing the methods for measuring program implementation. During that year criteria were established for measuring implementation, data collection instruments were finalized, and a report summarizing this work was submitted.

Before these procedures are described, however, it is important to note that the PDC Implementation Study differs from other studies of the educational change process in several ways. First, much of the literature either describes the implementation of curriculum elements such as a special reading program (e.g., the review by Fullan & Pomfret, 1977) or the creation of complete "new schools" that are not simply redesigns of existing programs (e.g., Miles, Sullivan, Gold, Silver, & Wilder, 1978). Although PDC is a more comprehensive innovation than a single curriculum element, it is not quite a "new school" either. PDC was a "framework for innovation" that provided general guidelines sketching what the program might look like, but did not confine the programs to detailed requirements. This fact clearly affected the way we developed criteria for measuring implementation. Second, PDC frequently involves several schools and Head Start centers, whereas much of the research on educational change has focused on innovative programs in single school buildings. Third, PDC was designed to create linkages between existing programs; the literature on educational change processes typically focuses on change within a system rather than the linkages between systems. Finally, each PDC project is part of a national evaluation study, and most projects have had to consider the needs of the evaluation when making decisions, and could not simply do what might have been best programmatically. Awareness of these features of the PDC demonstration program has contributed to the methodology developed for assessing program implementation.

Establishing Criteria to Measure Implementation

Any attempt to place different programs along a common quantitative dimension is certain to encounter problems, and the PDC evaluation was no exception. PDC was never intended to be a comprehensive model that would be installed faithfully at each site. Instead, each local project was expected to develop, within certain guidelines, a program suited to local needs. Were PDC a single model, systematic criteria and procedures for implementation assessment would be relatively straightforward to develop. Since it is not, care had to be taken not to impose more structure on programs than the guidelines dictated. Still, a common framework for observing and assessing implementation across sites was needed because the PDC demonstration project was designed to answer questions for ACYF regarding whether a particular type of educational intervention could produce the desired outcomes in children.

Developing the IRI

The Implementation Rating Instrument (IRI), developed in Years II and III, attempted to reconcile these conflicting demands by defining rating criteria for (a) the extent to which sites have implemented basic guideline requirements and (b) participants' views of the effectiveness of that implementation, without specifying the precise nature of the program. Events forced some compromises in this position, but the basic focus of the IRI was upon the degree to which programs implemented their own particular interpretation of the guideline requirements.

The IRI is a set of items which allows site visit staff to systematically evaluate the programmatic information that is collected by a variety of means (interviews, records, and site documents primarily). Two types of scales were developed for making ratings of implementation--objective and judgmental.

The IRI objective rating scales were developed by extracting a list of discrete program requirements from the guidelines and then devising a set of rating scales that could be used to assess the extent and effectiveness (as perceived by participants) with which a site had implemented their programmatic solution to that requirement. Through this process almost 350 separate 4-point rating scales were developed that span the seven program component areas. These scales (called "objective" because their ratings were based on explicit, and often quantitative program data) are of four basic types: those rating the presence of the various program activities at the Head Start and elementary school levels; those rating the extent of that implementation (in terms of numbers of children affected, classrooms involved, etc.); those assessing participants' perceptions of the effectiveness of that implementation; and finally, those assessing the roles played by different groups in implementation decisions and activities.

The judgmental scales asked the site team members to reassess the program's implementation levels based on everything they knew or felt about the program. The judgmental scales were designed to tap two of the same dimensions as the objective scales (the extent and effectiveness of implementation) plus an additional dimension, the "intensity" or amount of effort and importance accorded the subcomponent by project staff. By these procedures we hoped to address two problems of implementation assessment: equal weighting and the obscuring of mitigating circumstances. Objective items gave equal importance to each program element; the judgmental allowed evaluator's "weightings" to influence the ratings. Objective ratings made no allowance for mitigating circumstances; the judgmental allowed a variety of circumstances and situations to influence the ratings.

Initially, the intention was to use both types of rating scales in the spring 1976 field test at five sites and, based on that test, to select the most useful type for inclusion in the full data collection. The results using the two scales (see Interim Report IV) were sufficiently different in the field test, however, that both scales were retained in the revised Implementation Rating Instrument used in Year III.

Planning Data Collection Methods

Information on which the ratings were based needed to be obtained from several sources. Nine data collection strategies were developed during the first two years of the evaluation that could have been used in the Implementation Study:

- Structured interviews to be conducted with PDC administrative and teaching staffs during site visits;[1]
- Ethnographic (i.e., non-instrumented) observations of PDC classes during site visits (Year II only);
- Systematic observations of PDC classes by local testers using a time-sampling observation instrument (Years II and III);

[1]Eleven separate interviews were developed: six for local personnel most knowledgeable about each program component (administration, education, bilingual-multicultural, handicapped, parent involvement, developmental support services), one for parents, one for teachers, one for the program administrator, one specifically for bilingual bicultural demonstration programs, and one for the PDC Council chairperson.

- Parent questionnaires mailed to a random sample of PDC and comparison school parents as part of the Impact Study (Year III only);[1]

- Teacher Surveys conducted with a sample of PDC and comparison school teachers as part of the Impact Study (Year III only)[1];

- Documents (i.e., proposals, curriculum statements, etc.) collected from sites (Years I-III);

- Data collected as part of the cost analysis (Years II and III);

- An optional onsite record-keeping system to be used by PDC staff to record needed information on PDC meetings, training activities, and delivery of required health and social services (Year III);

- A structured interview to be conducted with principals of comparison elementary schools and directors of comparison Head Start programs to obtain programmatic information on the comparison programs (Year III);[2]

Data relevant to most implementation variables were obtained through the structured interviews, with the other strategies supplying auxiliary or verification information. Site documents, the record-keeping system, and Cost Study data have been, however, a primary source for certain highly quantitative data (for example, average monthly volunteer hours) which would be difficult and time-consuming to collect in interviews. The Parent Survey was to have obtained opinions from parents about the effectiveness with which various parent involvement requirements have been implemented, so data on the actual number and kinds of parent activities were obtained from the other sources.

Year II Implementation Report

By August of Year II, these activities culminated in a report to ACYF (Interim Report IV, Volume 2) that also presented a preliminary analysis of factors that appeared to relate to levels of program implementation. Analysis of sites' efforts to implement PDC revealed that a small set of

[1]The Parent and Teacher Surveys could not be administered due to delays in obtaining forms clearance from OMB.

[2]The interviews with comparison principals or Head Start directors could not be administered due to delays in obtaining forms clearance from OMB.

identifiable factors seemed to repeatedly influence local attempts to implement PDC. If anything, the analysis underscored what is so often emphasized in the literature: efforts to introduce change in existing school programs are exceedingly difficult. PDC attempted to effect systemic changes in both Head Start and elementary schools, and the agents of this change had to contend with (or capitalize upon) existing regularities within the schools and communities.

The report went on to identify 37 factors which seemed to facilitate or impede implementation progress, and from this list, hypotheses were formulated which related specific factors to program implementation levels measured by the IRI. These factors and hypotheses formed the basis of the third year implementation evaluation, and provided the framework around which analysis of implementation was carried out.

Year III Implementation Study

In fall 1976 the record-keeping system developed during Year II was installed by asking each site to maintain forms for documenting developmental support services provided, parent classroom participation, business conducted during PDC meetings, and the nature and frequency of training activities.

Between January and March 1977 nine sites were visited, and on the basis of records maintained on the above forms and interviews conducted with PDC staff, site teams rated levels of implementation using the IRI.[1] The findings from Year III data collection are reported in two volumes in Interim Report VII. Volume I presents the national perspective, describing patterns and processes of implementation across sites and proposes possible explanations for the observed levels of implementation. Volume 2 provides backup detail, with descriptive accounts of each site's program activities. The findings of Interim Report VII are summarized here.

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[1]As explained earlier, the number of sites included in the complete Implementation Study was, in part, determined by what data collection activities were legitimate in the absence of OMB forms clearance. In addition, one site (Arizona) was not included in this aspect of the data collection because of the special case study design that was used for that project. It should be pointed out, however, that various levels of information were available on all 15 sites for at least portions of the PDC implementation period, and this information was used in our analyses where it was considered appropriate.

Findings Related to Patterns of Implementation Activities

One of the most striking findings from the Implementation Study was the wide variation in ratings across sites. When this variation was analyzed some interesting patterns emerged; these patterns, with respect to the major program components, are summarized here. Following this section we present a synopsis of the factors that seem to have influenced the activities and the ratings.

Education. Each of the projects has developed or adopted a curriculum that can be applied from Head Start through third grade. A few sites decided to purchase and adapt existing curriculum "packages," while others chose to develop their own curricula by making major changes in existing Head Start or school curricula. Several other sites decided that they already had curricula that fulfilled the PDC guidelines. By these varying means, almost all sites received high implementation ratings in the education component. Thus, whatever other emphases a site may have had, it seems that classroom instruction was paramount.

Bilingual bicultural and/or multicultural education. The sites that were designated as bilingual demonstration programs were much more likely to implement an approach to bilingual education that could be classified as a "maintenance" program (i.e., conscious efforts were made to maintain the children's mother tongue at the same time they were learning English); the approach of most sites, however, could be characterized as either ESL (English as a second language) or transitional bilingualism (in which the native language was used for instruction only at the Head Start level).

Services for handicapped children. Mainstreaming of handicapped children in regular classes at both Head Start and elementary school levels was evident at all sites. The comprehensiveness of services for handicapped children, however, seemed to be more a function of other state and local programs than of the efforts of PDC.

Parent involvement. There was considerable site-to-site variation in parent involvement ratings. The variations reflected both differences in program emphases and local obstacles to achieving parent participation when it was actively sought. The PDC projects have been more likely to strive for parent participation in classroom activities than to emphasize parent involvement in substantive program decision-making. Head Start parents were generally more likely to be involved as classroom volunteers than elementary parents.

Developmental support services. There was considerable consistency across sites in this area. Most sites provided the required screening and follow-up services to Head Start and elementary children, provided at least some training for staff, and kept records in accordance with program guidelines.

Administration. Levels of implementation in this component depended on how well the PDC Councils functioned and the extent to which Council members participated in program policy decision-making. Only five sites had Councils that included all of the member groups required by the guidelines, and the size of the Councils ranged from 11 members at one site to 36 at another. Although the formal authority of Councils ranged from having decision-making powers to being strictly advisory, the "advisory" functions were often equivalent to decision-making. At most sites, elementary school parents, teachers, and administrators were better represented on the PDC Councils than Head Start parents, teachers and administrators. In one of the more interesting variations in PDC staffing patterns, it was found that PDC coordinators were, in some cases, responsible for only one program component--overall program administration--but at some sites coordinators were responsible for as many as three components.

Training. Training activities varied considerably across sites as each project attempted to meet guidelines requirements and its own needs in different ways. Some sites received high ratings for implementing all aspects of the training component; others focused their training in particular areas (e.g., training staff in parent involvement) and received high ratings only in those areas.

Findings Related to Determinants of Implementation

As mentioned above, a number of hypotheses were generated in Year II and tested in Year III. A detailed discussion of the evidence for and against each hypothesis is presented in Interim Report VII, Volume 1. The analysis of determinants of implementation was organized into four areas. The rationale for considering each of these areas is presented here, and a summary of the factors found to be most important is presented in Table 3.

The PDC setting. The setting for PDC is a potentially important determinant since no change effort occurs within a vacuum--existing regularities have to be altered. PDC, as a major attempt to modify existing Head Start and elementary school programs and the linkages between them, is particularly susceptible to the influence of existing attitudes, policies, and practices in the district and community.

Local initiation of PDC. Decisions to adopt large-scale federal programs, such as PDC, are to a large extent political acts. Thus, there is an initial "push" from the federal level to obtain the necessary number of adoptions. Often, local decisions to participate are based on decisions made at administrative levels above the individual schools or centers that will ultimately be participating in the project. In the case of PDC, different sites made their decisions to participate in PDC in different ways. The relationship between some of these procedures and later implementation levels was investigated.

Planning year activities. Planning year activities were hypothesized to be major determinants of later implementation. PDC has been unique among recent federal demonstration programs in that a full year of local planning was permitted before the program actually got underway. Many project personnel who remember the difficulties encountered in attempting to set up Head Start or Follow Through programs in a matter of weeks applauded this feature of PDC. ACYF's expectation was that following the planning year, the complete PDC project would be implemented immediately, with no sequencing either by component or by grade levels. The planning year and associated expectations thus created situations that could influence later implementation in important ways.

Implementation year strategies, events, and activities. Finally, of course, the activities and events of the implementation period itself would be expected to determine the implementation levels that were observed in our evaluation. Within the basic framework provided by the federal program guidelines, each site was encouraged to develop its own unique program, employing strategies considered appropriate and necessary by local staff. In practice, sites diverged considerably in their approaches to PDC, and these approaches were expected to directly affect the implementation levels that were later achieved.

Table 3 attempts to summarize the complex array of factors affecting implementation by displaying the factors, events, or strategies that have had the greatest influence on the implementation of the PDC guidelines. The information is organized according to the four areas described above. The best interpretation of this is that, when the experiences of all PDC sites were examined, these activities or events were found to have important influences on the extent to which programs were able to implement the guidelines. Although it might seem that a successful site would simply be the one with the most factors present, the reality is somewhat more complex. The elements are not simply additive. Those listed on the left side of the table frequently constrained those to the right, so that if certain elements of the PDC setting were not present (such as a prior Head Start-elementary school relationship), it was more difficult for the presence of an activity to the right to compensate. The interaction of

Table 3

Four Sets of Factors, Events, and Strategies that Contributed to Implementation During the First Three Years

THE PDC SETTING	LOCAL INITIATION OF PDC	PLANNING YEAR ACTIVITIES	IMPLEMENTATION STRATEGIES, EVENTS AND ACTIVITIES
Location in a mid-sized community and school district Some prior relationship between Head Start and elementary programs (joint administration, geographic proximity, emphasis on continuity) Pre-existing district philosophies, priorities, legislation, programs that are similar to or compatible with PDC At least a minimal number of existing community resources High concentrations of minority groups in the schools or centers (affecting bilingual/multicultural components only) High concentration of Head Start graduates in elementary classes High number of minorities in positions of authority (affecting bilingual/multicultural components only) Minority groups actively seeking to maintain their own language or cultural traditions (affecting bilingual/multicultural components only) Favorable parental attitudes toward schools and federal programs and traditions of parent involvement in schools	Broad participation by Head Start and elementary parents, teachers, and administrators in the first proposal writing School district designated the Head Start delegate agency (primarily affecting the start-up period)	Planning began early Teachers, parents, administrators involved in planning High number of planning tasks completed Teachers participated voluntarily or at least given the option to transfer Teachers experienced in instructional approaches analogous to PDC Coordinator with experience as an administrator Mostly younger teachers participating Key staff experienced in educational change Key staff familiar with the workings of the school district and Head Start programs Parent Involvement coordinator from the community and with professional experience involving parents in schools or centers, rather than experience only as a volunteer	PDC staff given line authority at both Head Start and elementary levels PDC staff housed either with the elementary teachers or with school district staff PDC has full and active support from district officials, Head Start center director, principal Components assigned to specific individuals No individual has responsibility for more than two components Component responsibilities span both the Head Start and elementary levels Procedures for regular and frequent communication are formally established Many participants involved in planning activities Project has had continuity of staffing Sites developed or purchased curriculum, or willingly kept existing curriculum Sites have had a large amount of training for participants

factors worked in the opposite way as well. In some cases the presence of one factor more than compensated for the absence of another (e.g., if participation in proposal writing had not been broad, an effective coordinator could make up for this by carefully including the elementary school principal and Head Start director in the PDC communication network). In the final chapter of this report, we present our synthesis of this information in eight general conclusions about PDC implementation--our attempt to describe the "lessons learned" about the program.[1]

Cost Study

An accurate estimate of what it might cost to replicate PDC in similar communities throughout the country is important for ACYF's planning. To estimate these costs, an approach was designed by Development Associates (DA) to ascertain the value of program resources, rather than the "cost" of PDC. These resources include not only the specific PDC grants, but also the resources of the Head Start programs and elementary schools involved in the program. PDC is also responsible for utilizing community resources in support of program goals. Thus, a number of public social service agencies and individuals such as doctors, dentists, parents, and business leaders may function as program resources, and the value of their services (even when donated to the program) was included as part of the value of the programs.

With this approach, the dollar value of all goods and services associated with PDC will appear high. It must be remembered that these figures do not represent the cost to the government of operating the demonstration program; rather, the figures represent what the cost would be if one were to purchase all elements that combine to yield the total program effort. Since the demonstration program depends so heavily on resources already available through Head Start, the public schools, and the community, this Cost Study approach is referred to as a study of resource utilization, and the dollar figures reported are referred to, not as costs, but as value of resources utilized.

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[1]This first phase of the PDC evaluation leaves unanswered questions about relationships between program implementation and impact on children. Preliminary analyses to address this issue are reported in Interim Report VII, Volume 3, but are too exploratory to yield clear conclusions at this stage.

Development of a Cost Accounting System

To determine the value of the resources used and to allocate these resources across program components, a comprehensive cost accounting system was designed during Year I and refined for Years II and III. In order to ensure consistency of data across sites, standard definitions were extracted from the PDC guidelines and standardized procedures and instruments for recording and assigning values to various resources were established. No cost data were collected during the first program year since that year was used for planning and no children were served. During the implementation of the system in Year II, DA's cost specialists made two visits to each site to familiarize PDC staff with the definitions, instruments and procedures. Three requests were made of PDC staff. The first was to record each PDC grant expenditure and specify the program component for which it was spent. The second was to record each non-cash contribution made to the PDC effort. The third request was for each PDC staff member to maintain a record during one week each quarter to indicate how much and what percentage of their time was spent on work related to each PDC program component.

Data were collected on a quarterly basis in order to provide an opportunity to monitor the quality of the incoming information. During site visits at the end of each year, cost specialists determined the dollar value of the resources utilized. Where actual dollar values were not recorded, estimates from local sources were obtained. For services contributed, the actual or estimated time each resource was used was also required.

Year III Data Collection

For the third program year the Cost Study was expanded to include the determination of resources utilized at comparison programs and to calculate the value of these resources. This involved conducting interviews with Head Start center directors, elementary school principals, and their respective administrative support staffs. In addition, salary information was obtained for all personnel who worked directly with or in support of the comparison programs. For these sources, the resources utilized and costs incurred were tabulated and categorized into the seven PDC program components. The data from both the PDC program and the comparison programs were then compiled and comparisons were made of the similarities and differences in resource utilization patterns. Findings were presented in Interim Report VIII, and are summarized here.

Third Year Cost Findings

During the third PDC program year the total value of resources utilized by 12 PDC programs was $7,432,076.[1] Of this total, 16.9 percent was derived from the PDC grants, 56.5 percent from school districts, 10.5 percent from Head Start, 10.8 percent from other federal resources, and 5.3 percent from local community sources. A comparison of the percentage distributions of the Early Childhood Schools (ECS) programs and the Preschool-School Linkages (PSL) programs revealed that the largest difference between the two models was in the contributions made by school districts--60.8 percent of the resources utilized by PSL sites came from the school districts while only 49.8 percent of the resources utilized by ECS sites came from the school districts. A difference in the proportion of the PDC grant contribution was also found between the two PDC models--21.7 percent of the resources utilized by ECS sites came from the PDC grants, whereas only 13.8 percent of the resources utilized by PSL sites came from the PDC grants. Differences between the two models in contributions made by the other sources were small.

The value of the total resources was highly related to the number of children served by the program, which in turn, was related to the number of elementary schools involved with PDC. PSL programs had an enrollment almost twice as large as the ECS programs (4,519 students in PSL programs vs. 2,222 in ECS programs). The percentage of the PDC grant in relation to total program resources varied from 7.0 percent at one site to 28.6 percent at another. This variability appeared to be a function of the availability of resources in each community.

Education received the greatest share of program resources by far. Over the 12 PDC programs, 65.2 percent of the resources were utilized for the education component, 10.6 percent for administration, 9.6 percent for services to the handicapped and learning disabled, 7.0 percent for developmental support services, 3.9 percent for parent involvement, 2.2 percent for bilingual bicultural and multicultural activities, and 1.5 percent for training. The only real difference between program models in this distribution was in administration: ECS programs utilized 13.5 percent of their resources for administration whereas PSL programs utilized 8.8 percent. When PDC resources were analyzed by type of expenditure it was found that 90.8 percent was utilized for personnel, 3.7 percent for facilities, 3.0 percent for contractual services, 1.4 percent for materials, and 1.2 percent for travel and transportation. These distributions of resources by type and by components were very similar for Years II and III, indicating that the overall program emphasis in terms of expenditures and resource utilization remained about the same from one year to the next.

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[1]Because the Arizona project was so different from the other sites in terms of factors affecting costs, it was not included in the Cost Study.

Across all 12 programs the average value of total resources utilized was $1,102 per child. The value for ECS programs was $1,309 per child, the value for PSL programs was $1,001 per child. Since the value of the PDC program grant averaged only $192 per child, these figures illustrate the very great extent to which additional resources have been utilized by the programs.

The collection of data from the comparison Head Start centers and schools showed that the difference between PDC and comparison programs in the value of total resources utilized per child was $192, or approximately equal to the amount of the PDC grant per child. It was also found that the distribution of resources across program components was generally comparable. There were slight differences in the proportion of resources allocated to some areas, which reflect the emphasis of PDC in providing a more comprehensive program. Whereas the comparison program data showed a higher proportion of resources allocated to the education areas (an average of 71 percent vs. 65 percent for the PDC program), the PDC programs distributed their resources so that greater proportions were allocated to parent involvement and developmental support services.

IV

CONCLUSIONS AND IMPLICATIONS

This phase of the PDC evaluation has been designed primarily to determine whether conditions are suitable for proceeding with a longitudinal study of PDC's process and effects through third grade. At the same time, the evaluation has examined the implementation process during the first three years and provided an assessment of program costs.

Previous reports in this series have indicated that there are suitable comparison groups at the PDC sites; that the child measures are sufficiently reliable, valid, and sensitive to change; and that sample sizes are adequate to withstand the effects of attrition. In the past year, reports have examined the effects of PDC on children during the Head Start year and explored factors affecting program implementation. These two aspects of the findings are summarized here.

The Impact of PDC on Children's Development

The first group of children to be evaluated entered PDC Head Start centers in fall 1976. Impact measures, which include a variety of tests, observations, and ratings, were administered in the fall and again in the spring of the Head Start year, and PDC children's progress was compared with the progress of similar children in nearby non-PDC Head Start centers. Although a few small differences were found between the groups, overall the findings confirmed the expectation that the two groups would show about the same degree of progress through the Head Start year. Since PDC is designed to provide greater continuity in the transition from Head Start to elementary school, it is reasonable to expect future testing to show PDC's real impact.

After looking for overall PDC effects, the possibility of effects under specific conditions was investigated. For example, analyses examined whether PDC might have different effects for boys than for girls, or might produce greater gains in one site than in another. No differences in the program's effects under these different conditions were found, leading to the conclusion that, through the Head Start year at least, PDC is equally effective for boys and girls, for all ethnic groups, for children from all sites, and for children who did or did not have prior preschool experience.

The findings of the first phase of the Impact Study can be summarized as follows:

- Conditions are suitable for a longitudinal study of PDC's impact on children through third grade.
- At the end of a year of Head Start, children in PDC and comparison groups showed essentially the same degree of progress, as expected.
- Progress of the two groups was equal not just in general, but also under all the special conditions examined.

At this stage, the most important contribution of the PDC evaluation has been the knowledge gained about program implementation. The Implementation Study, as summarized next, has provided extensive information about what has been accomplished in the program's initial three years and about some of the reasons for those accomplishments.

Lessons Learned About PDC Implementation

In 1976-77 PDC implementation activities were intensively studied at nine sites--profiles of program implementation were developed and factors shaping implementation were analyzed. The measurement of implementation indicated that almost all sites received high ratings in the education component, particularly in areas concerned with development and implementation of a curriculum and diagnostic system. In contrast, ratings in other components--and especially in parent involvement--were highly variable from site to site.

General Conclusions

On the basis of these analyses, eight general conclusions about PDC implementation were drawn:

- No single factor or event was sufficient to "make" or "break" a project; only combinations of factors operated to influence implementation.
- The single most powerful set of determinants of implementation during the first three years was the educational and community setting for each project.

- The second most important set of determinants of implementation was the background, creativity, and initiative of PDC staffs.

- In general, Early Childhood School sites were able to implement the PDC guidelines more readily during the early years than were Preschool-School Linkage sites, although this does not mean that the potential for ultimate success is any greater for one model than for the other.

- The planning year was a critical factor in the implementation of PDC.

- When some form of planned sequencing of implementation was adopted, sites made more rapid progress in their areas of focus.

- Implementation proceeded most rapidly where administrative legitimacy for PDC staff had been established at both the Head Start and elementary levels.

- Implementation proceeded most rapidly where a sense of "ownership" of PDC had been established among staff at both the Head Start and elementary school levels.

Some Specific Factors that Affected PDC Implementation

In addition to these general conclusions, a number of specific factors emerged as most clearly related to program implementation during the initial years. They are listed here in four areas--the PDC setting, local initiation of PDC, planning year activities, and implementation activities during the implementation year.

The PDC setting. Five factors associated with the setting of the local PDC program seemed to be associated with higher implementation levels:

- Location in a mid-sized community (20,000-100,000 population) and mid-sized school district;

- History of close cooperation or joint administration of Head Start and elementary school programs by the school district;

- Pre-existing district philosophies, priorities, legislation, and programs similar to or compatible with PDC;

- High concentration of the target ethnic groups in the schools or centers (affecting implementation in the bilingual-multicultural component only);

- Favorable parental attitudes toward schools and federal programs.

Local initiation of PDC. Two features of the situation surrounding the beginnings of PDC seemed to confer at least an initial advantage because their presence meant that certain important linkages demanded by PDC were already in place as the tasks of planning and implementation began:

- Broad participation by parents, teachers and administrators in the first proposal writing (coordination at this stage between the Head Start center directors and elementary school principals who would later participate in the project was particularly valuable);

- Designation of the school district as the delegate agency for the Head Start program, and thus for PDC (this increased the likelihood that Head Start and the schools had already established a working relationship prior to PDC, it made it easier for PDC staff to have formal authority that spanned both levels, and it made it easier for the elementary school teachers to accept the project).

Planning year activities. Although all programs were granted this special period, they did not use it equally effectively. Five features of planning year activities stood out as contributing to higher levels of implementation in the third year:

- Involvement of teachers, parents, and administrators in planning;

- Voluntary participation of teachers;

- Coordinator experienced as an administrator;

- Key staff members familiar with the workings of the school district and Head Start programs;

- Parent involvement coordinator from the community and with professional experience involving parents in schools or centers.

Implementation strategies, events, and activities. Implementation activities during the implementation year were also important to the success of PDC. Higher levels of implementation were associated with the following conditions:

- Clearly delineated lines of authority for PDC staff at both Head Start and elementary levels;

- PDC staff housed either with the elementary teachers or with school district staff;
- Full and active support for PDC from district officials, the Head Start center director, and the school principal(s);
- Responsibility for components assigned to specific individuals;
- No individual responsible for more than two components;
- Component responsibilities that spanned both the Head Start and elementary school levels;
- Adoption of an existing curriculum or purchase of an intact curriculum;
- Frequent training for PDC participants.

A Final Comment

Broad implications for federal efforts to promote innovative educational programs have emerged from three years of Project Developmental Continuity. The approach ACYF adopted for PDC was one of providing a "framework for innovation" rather than dictating specific innovative practices. Within this framework a number of strong local programs have developed. From the perspective of extensive implementation data, it seems that the PDC framework offers a potentially effective model of educational change. As the evolution of PDC continues over the next few years, the models for continuity should become stronger and clearer. PDC is certainly altering the character of educational settings; the importance of this altered character for the educational progress of children will become clearer as the demonstration program proceeds through the coming years.

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APPENDIX A

SUMMARY OF MEASURES USED IN THE PDC EVALUATION, 1975-1977

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Cognitive-Language Measures

Bilingual Syntax Measure (Burt, Dulay and Hernandez-Ch., 1975).[1] This test is designed to measure children's oral proficiency in English and/or Spanish grammatical structures. Simple questions are used with cartoon-type colored pictures to provide a conversational setting for eliciting natural speech. An analysis of the child's responses yields a numerical indicator and a qualitative description of the child's structural language proficiency in standard English or standard Spanish. Responses are written down verbatim.

Wechsler Preschool and Primary Scale of Intelligence, Block Design subtest (Wechsler, 1967).[2] The task requires reproducing (constructing) designs with flat colored blocks, either from the examiner's model or from a picture on a card. The measure taps problem-solving abilities, flexibility of response style, visual-motor organization, and execution.

Wechsler Intelligence Scale for Children (WISC), Block Design subtest (Wechsler, 1949).[3] Similar to the WPPSI in that the child tries to make designs with colored cubes to match designs made by the interviewer or in a picture on a card, but suitable for older children.

Conceptual Grouping (McCarthy Scales).[4] The child's abilities to deal with objects and categories are tapped in this subtest. The child uses blocks and is asked to respond to questions by choosing blocks that belong in a group, or by putting together groups (for example, "Find the square one," "Find all the big yellow ones," and so on).

Draw-A-Child (McCarthy Scales). Child draws a picture of a child of the same sex. Scoring credits children for their ability to articulate parts of the body in their drawings.

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[1]Burt, M., Dulay, H., & Hernandez-Chavez, E. Bilingual Syntax Measure. New York: Harcourt, Brace, Jovanovich, 1975.

[2]Wechsler, D. Wechsler Preschool and Primary Scale of Intelligence: Manual. New York: Psychological Corporation, 1967.

[3]Wechsler, D. Wechsler Intelligence Scale for Children: Manual. New York: Psychological Corporation, 1949.

[4]McCarthy, D. McCarthy Scales of Children's Abilities: Manual. New York: Psychological Corporation, 1972.

Say and Tell (CIRCUS).[1] This test is designed to assess descriptive language abilities. The child is given objects (a pencil and two pennies) to talk about and describe to the interviewer. The scoring is based on categories of attributes which the child mentions.

Verbal Memory (McCarthy Scales). Two perspectives on short-term memory are obtained. The child is asked to repeat sequences of words (Verbal Memory-1) and to repeat or retell as much as possible of a one paragraph story (Verbal Memory-3).

Verbal Fluency (McCarthy Scales). Ability to recall information by conceptual categories is measured by this test. The child is asked to name as many members of specific categories (e.g., animals) as he/she can.

Social-Emotional Measures

PDC Child Rating Scale (High/Scope Foundation, unpublished). This instrument is designed as a measure of social competence to be administered by the respective classroom teachers of the children rated. For each of the 39 items, specific behaviors such as "Uses words or wits to influence others" are rated on a 5-point scale according to frequency of occurrence ("Very frequently" to "Rarely"). Six scales were derived through factor analysis: friendliness, aggressiveness, perseverence, independence, self-assurance, and resourcefulness.

PDC Classroom Observation System (High/Scope Foundation, unpublished). The PDC observation system was developed to provide information about children's classroom behavior along dimensions pertinent to the social-emotional goals of Project Developmental Continuity. The system focuses on aspects of an individual child's behavior, verbal or non-verbal, that reflect the child's attitude toward himself, and on the child's social competence as demonstrated in his interaction with peers and adults.

Using a time-sampling method, trained observers observe each child for five minutes at two different times during the day and code their behavior into four general categories: "noninvolved," "involved," "interacts with peer," and "interacts with adult." A fifth category, "activity level," is included to provide information concerning the context in which these behaviors were observed. Each of these categories includes subcategories that are designed to identify the frequency and nature of specific behaviors within the general category.

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[1] CIRCUS. Educational Testing Service, Princeton, New Jersey, 1974.

Preschool Interpersonal Problem-Solving Test (Shure and Spivack, 1974).[1] The PIPS attempts to assess the child's ability to name alternative solutions to a life-related problem--that of obtaining a toy from another child. Paper cut-outs of boys, girls and toys are used in presenting the problem. Among inner-city four-year-olds attending the Philadelphia Get Set day care program, those judged as better adjusted by their teachers were able to conceptualize a greater number and a wider range of alternative solutions to real-life problems than were their more poorly adjusted classmates.

Pupil Observation Checklist (High/Scope Foundation, unpublished). This is a rating scale consisting of twelve 7-point bipolar adjectives derived from a similar scale used in the Home Start evaluation.[2] The tester rates each child using this instrument after he or she has administered all the other measures in the battery to the child. Scores are derived for two scales: task orientation and sociability.

Stephens-Delys Reinforcement Contingency Interview (Stephens and Delys, 1972).[3] This measure finds out whether a child thinks that his own behavior would change what other people do or feel. In other words, if a child changes his behavior, will his teachers', parents' or friends' attitudes or behaviors change as a result? Twelve questions were used, for example, "What makes your teacher happy?".

Psychomotor Measures

Arm Coordination (McCarthy Scales). This measure assesses a child's arm coordination. Activities include ball bouncing, catching a beanbag, and throwing a beanbag at a target.

Block Building (McCarthy Scales). This interview is designed to assess a child's finger and hand coordination and his perceptions of things and spaces as he builds things out of blocks to copy what the interviewer has built.

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[1]Shure, M. B., & Spivack, G. The PIPS Test Manual. Philadelphia: Hahneman Medical College, 1974.

[2]Love, J., et al. National Home Start Evaluation Interim Report VII. Ypsilanti, Mich.: High/Scope Foundation, March 1976.

[3]Stephens, M. W., & Delys, P. Stephens-Delys Reinforcement Contingency Interview. Purdue University, 1972.

Leg Coordination (McCarthy Scales). This task measures a child's leg coordination. Activities include walking backwards, walking on tiptoes, and skipping.

Site-Specific Measures

Do You Know...? (CIRCUS). This is a general information interview. The child chooses appropriate pictures which answer the interviewer's question. This task taps the child's experience in a variety of areas (health, safety, social standards, consumer concepts).

Opposite Analogies (McCarthy Scales). In this test of classification skills, the child is asked to supply the missing word in an analogy (for example, "The sun is hot; ice is ____").

Wepman Auditory Discrimination Test (Wepman, 1973).[1] This measure assesses the child's ability to tell the difference between sounds.

Other Measures

Adult Language Check. This measure is used in the bilingual bicultural demonstration sites to obtain an indication of the languages the adults in the classroom use during their interactions with children. The interviewer sits in the classroom for a two-hour period and records the language used by the teachers and aides within five-minute intervals.

Height and Weight. All children are weighed and measured during the same two-week period at testing time.

PDC Faces Interview (High/Scope Foundation, unpublished). This test is designed to assess the child's attitude toward school and his teacher. The child is asked to point to one of five faces (which range from happy to sad) as he is asked questions about school and his teacher.

Preschool Productive Language Assessment Task (PPLAT), (High/Scope Foundation, unpublished). This measure is designed to assess oral language proficiency. Each child is provided with a variety of materials and interacts informally with the adult tester for about thirty minutes. The entire session is tape-recorded and later transcribed for coding.

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[1]Wepman, J. Auditory Discrimination Test. Chicago: Language Research Association, Inc., 1973.

APPENDIX B

CONTENTS OF PDC EVALUATION REPORTS

Report Title (Date)	Contents
Interim Report I (April 1975)	
Part A: Preliminary Planning Year Case Studies[1]	*Narrative descriptions of planning activities at the 15 PDC sites based on the initial winter 1975 site visits.*
Part B: Preliminary Site Evaluation Designs[1]	*Preliminary estimates of needed sample size at each site and recommendations for comparison Head Start centers and elementary schools.*
PDC Monitoring Report[1]	*Fifteen site monitoring reports rating compliance with planning year guidelines; recommendations to ACYF for training or technical assistance.*
Interim Report II (June 1975)	
Part A: Planning Year Case Studies	*Description and analysis of planning activities at the 15 sites during Year I.*
Part B: Recommendations for Measuring Program Impact (ED 144 715)	*Review of process of selecting and recommending measures to be used for assessing impact on children, teachers, parents, and on the Head Start and school institutions.*
Part C: Status of the Impact Study[1]	*Presentation of Year II design; update of site-level recommendations for location of comparison schools and sample size; baseline data on classrooms, teachers, programs, and community services.*
Monitoring Report No. 2[1]	*Assessment of compliance with planning year guidelines at 14 sites.*

[1]Submitted only as in-house report to ACYF; not for dissemination.

Report Title (Date)	Contents
Interim Report III (March 1976)	
Part A: Status of the Impact Study[1] (Volumes 1 and 2)	*Psychometric analyses of child measures pilot tested in fall 1975; response distributions for each test by site; recommendations for changes in the measurement battery; analysis of comparability of PDC and comparison groups; recommendations for continuing the evaluation at each site.*
Part B: Implementation Study Design for Program Years II and III[1]	*Design of the Implementation Study for Years II and III. (Updated write-up of this design appears in Interim Report IV, Volume 2.)*
Executive Summary: Preliminary Recommendations for the Study of Child Impact	*Summary of Part A, with conclusions on suitability of the instruments and of the samples at each site and specific recommendations for Year III.*
Site Implementation Reports[1]	*Fourteen reports describing first-year implementation activities.*
Interim Report IV (August 1976)	
Volume 1: Pilot Year Impact Study--Instrument Characteristics and Attrition Trends	*Psychometric analyses of child measures (reliability, validity, relationship to social competence, sensitivity to change, suitability of measures for upper grades), site characteristics and comparability of PDC and comparison groups, analysis of attrition, and recommendations for modifying the impact battery.*
Volume 2: Development of the Implementation and Cost Studies	*Design of the Implementation and Cost Studies and interim analysis of factors affecting implementation; methodology and interim findings from the Cost Study.*

[1]Submitted only as in-house report to ACYF; not for dissemination.

Report Title (Date)	Contents
Interim Report V (October 1976)	
Second Program Year Cost Report[1]	*Cost analysis for PDC programs from July 1, 1975 through June 30, 1976; documenting by source and project component the cost of 14 PDC projects. (A comprehensive review of PDC program costs is presented in Interim Report VIII.)*
Interim Report VI (March 1977)	
Recommendations for Continuing the Impact Study	*Psychometric analyses of fall 1976 pre-test data on entering Cohort 2 Head Start children; description of the PDC and comparison samples, recommendations for the continued longitudinal study (based on comparability of the groups, suitability of the instruments, and adequacy of sample size).*
Executive Summary: Recommendations for Continuing the Impact Study	*Recommendations for continuing the Impact Study abstracted from Interim Report VI.*
Interim Report VII (August 1977)	
Volume 1: Findings from the PDC Implementation Study	*Report of national trends in PDC implementation activities and levels of implementation achieved.*
Volume 2: Site Implementation Reports[1]	*Descriptive reports of implementation activities at nine sites.*
Volume 3: Assessment of Program Impact Through the Head Start Year.	*Psychometric analyses of 1976-77 child data; preliminary evaluation of program impact at the Head Start level.*

[1]Submitted only as in-house report to ACYF; not for dissemination.

Report Title (Date)	Contents
Interim Report VIII (November 1977)	
Third Year Cost Study[1]	*Information about program cost for PDC and comparison schools and Head Start programs.*
Final Report of the PDC Feasibility Study, 1974-1977 (April 1978)	*Summary of implementation, cost, and impact study procedures and findings from the three-year evaluation; integration of cost, implementation and impact data.*
Additional Documents Produced During the Course of the Evaluation	
PDC: Some Questions and Answers (December 1975)	*This seven-page pamphlet posed and answered 16 questions about the PDC evaluation (especially its testing activities) for the benefit of parents and teachers; copies were widely distributed (in both English and Spanish) to the PDC sites.*
Field Procedures Manual (September 1975, March 1976, September 1976, March 1977, March 1978)	*Detailed procedures for testing and observing, quality control of data collection, and so on; used by High/Scope field staff on the Impact Study.*
Classroom Observation System Manual (Fall 1976)	*Rationale, background, and definitions of categories in the PDC Classroom Observation System.*
Implementation Rating Instrument (Spring 1977)	*The complete IRI developed for the Implementation Study.*
Site Visitors' Manual (Winter 1977)	*Presentation of site visit procedures, interview forms, procedures for using the IRI, and reporting requirements for Year III Implementation Study field staff.*

[1]Available from Development Associates, Inc., 2924 Columbia Pike, Arlington, Virginia 22204.